Remarks

Claims 1-6 and 10-17 are pending in the present application. In the final office action mailed May 13, 2003, the Examiner rejected claims 1, 2, 5, 6 and 10-15 under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art (hereinafter APA) in view of FR 2711573A to Dubois (hereinafter Dubois), JP 07081628A to Yoshinori (hereinafter Yoshinori), and optionally DE 4442767A1 to Ilzhöfer, et al. (hereinafter Ilzhöfer). The Examiner rejected claim 3 under 35 U.S.C. § 103(a) as being unpatentable over APA, Dubois, Yoshinori and optionally Ilzhöfer, and in further view of U.S. Patent No. 3,786,708 to Mumper. The Examiner rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over APA, Dubois, Yoshinori and optionally Ilzhöfer, and in further view of U.S. Patent No. 1,491,134 to Northall. The Examiner rejected claims 16 and 17 under 35 U.S.C. § 103(a) as being unpatentable over APA, Dubois, Yoshinori and optionally Ilzhöfer, and in further view of GB 2061871A to Corner.

With respect to the Examiner's rejections, the Examiner is invited to consider the following remarks.

Applicants respectfully traverse the rejection of claims 1-6 and 10-17. In particular, claim 1 provides for a method of making a composite panel of sandwich structure and provided with a hinge, the method being characterized in that, after the panel has been formed, forming a hinge between two portions of the panel at a predetermined place in the panel by cutting only a narrow incision through one of first and second skins, and substantially through the entire thickness of a cellular core, while leaving the other skin intact. Claim 15 provides similar recitations.

The Examiner admits that APA does not disclose forming a hinge by cutting only a narrow incision through one skin and the entire core of the panel while leaving the second skin intact. Instead, the Examiner asserts that the Abstract of Yoshinori discloses a method of forming an integral hinge in a thermoplastic honeycomb panel which is used in automobiles by cutting a narrow incision through one skin and the entire core of the panel

while leaving the second skin intact. However, the Examiner has mis-characterized the Abstract of Yoshinori. In particular, contrary to the Examiner's assertion, the published Abstract of Yoshinori recites:

> PURPOSE: To improve a shape retaining performance, and keep a floor covering material stable even if a heavy material is placed thereon.
> CONSTITUTION: In a floor covering material to cover a floor 20 of a trunk room 18 of an automobile having a recessed part 14 for a spare tire 12 and a recessed part for a tool, the material has a honeycomb layer 22 and a skin layer 24 to cover the upper side of the honeycomb layer. The honeycomb layer and the skin layer are formed integrally of hard plastic, and an integral hinge 30 is arranged to open and close a part to cover the respective recessed parts.

Nowhere is hinge 30 disclosed as a hinge formed by cutting a narrow incision through one skin and the entire core of the panel while leaving the second skin intact as asserted by the Examiner.

Furthermore, Yoshinori discloses that during the thermofusion of the epidermis material (28) and the core (26), an integral hinge (30) is obtained by maintaining an epidermis layer (24) or an upper epidermis material (27) to an integrated state between portions of a honeycomb layer (22). (See, computer generated translation of Yoshinori, a copy of which was provided in the amendment mailed January 22, 2003, para. 0014). The Examiner admits that the computer translation of Yoshinori indicates "the hinge is formed by maintaining, i.e., not cutting, layer 24 and one of the face sheets of the core". As such, the cited art, alone or in combination, fails to disclose, teach or suggest the presently pending invention.

The Examiner further mis-characterizes Yoshinori. The Examiner asserts, "In other words, it [i.e., the Abstract of Yoshinori] indicates the layers are all bonded together and then the hinge is formed without disturbing layer 24 and the face sheet bonded to it. Even without a written translation, this indicates a portion of the core and one face sheet are removed, i.e., by cutting". To the contrary, Yoshinori clearly indicates the integral hinge 30 is formed by maintaining the layer 24 or the layer 27, between portions of the honeycomb 22 (e.g., at the width A, of 4 mm) during the thermofusion. (See, for example, Yoshinori at Fig. 3 and at para. 0015). Yoshinori makes no mention, disclosure, teaching or suggestion of

forming a hinge by cutting a narrow incision through one skin and the entire core of the panel while leaving the second skin intact as presently claimed. Yoshinori fails to cure the deficiencies of the other cited references. None of the cited references, alone or in combination, provides the presently claimed invention.

Furthermore, "A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention". (See, MPEP § 2141.03, citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)). "The totality of the prior art must be considered, and proceeding contrary to accepted wisdom in the art is evidence of nonobviousness". (See, MPEP § 2145, X., 3., citing *In re Hedges*, 783 F.2d 1038, 228 USPQ 685 (Fed. Cir. 1986)).

In that regard, Yoshinori discloses a hinge structure (i.e., the hinge 30) that includes the epidermis layer 24 and the upper epidermis material 27. Accordingly, the hinge 30 is formed by upper layer 24 and skin 27, not skin 27. (See, for example, Yoshinori at Fig. 3). In contrast, the presently pending invention claims forming a hinge between two portions of the panel at a predetermined place in the panel by cutting only a narrow incision through one of first and second skins, and substantially through the entire thickness of a cellular core, while leaving the other skin intact.

Furthermore, the presently pending invention claims at least one first skin made of a reinforced thermoplastics material, a cellular core made up of a thermoplastic material, and a second skin made up of a reinforced thermoplastics material, and forming a hinge by cutting only a narrow incision through one of the first and second skins and substantially through the entire thickness of the cellular core, while leaving the other skin intact. The cited art, alone or in combination, fails to provide for a reinforced thermoplastics material skin hinge as presently claimed. In particular, as discussed above, Yoshinori discloses a hinge structure that includes the hard plastic epidermis layer 24.

Yet furthermore, APA (e.g., Dubois) teaches a panel formed by a honeycomb layer and two reinforced thermoplastic skins. As such, the epidermis layer 24 and the upper epidermis material 27 taught by Yoshinori is not compatible with the two upper and lower reinforced thermoplastic skins taught by the APA. Therefore, one having ordinary skill in the art would not have the motivation or suggestion to combine APA and Yoshinori as urged by the Examiner.

Ilzhöfer teaches forming a hinge by local deformation. As such, Ilzhöfer teaches away from Yoshinori as well as the present invention. Therefore, one having ordinary skill in the art would not have any suggestion or motivation to combine the teaching of Ilzhöfer with any of the other cited references as urged by the Examiner.

Furthermore, even if the cited references, alone or in combination, resulted in the presently pending invention which Applicants do not agree is the present case, the Examiner has failed to provide the motivation to combine the teaching of the cited art as is required for a *prima facie* case of obviousness under 35 U.S.C. § 103(a). The mere fact that references can be combined or modified, which Applicants do not agree is the case with respect to the cited references, does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination or modification. (See, MPEP § 2143.01).

The Examiner has also used impermissible hindsight to combine the teachings of the cited references to attempt to piece together the Applicants' invention. The teaching or suggestion to make the claimed combination must be found in the prior art, not in the applicant's disclosure. (See, MPEP § 2143; see also, *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999) ("Combining prior art references without evidence of ... suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability–the essence of hindsight.")).

Moreover, "[d]efining the problem in terms of its solution reveals improper hindsight in the selection of the prior art relevant to obviousness." *Ecolochem, Inc. v.*

Southern Edison Co., 227 F.3d 1361, 1372 (Fed. Cir. 2000) (citing *Monarch Knitting Mach. Corp. v. Sulzer Morat Gmbh*, 139 F.3d 877, 880 (Fed. Cir. 1998)). Here, the references cited by the Examiner fails to recognize the problem addressed by the Applicants' claimed invention (i.e., as stated in the presently pending application on page 2, ll. 23-28, "[T]he present invention proposes a novel method of making a composite panel of sandwich structure and provided with a hinge, which method is simple to implement, requires no additional subsequent operation, and thus makes it possible to manufacture such parts at a reasonably low cost".). In contrast, Dubois concerns making a panel which is light resistant. Yoshinori is directed to providing a firm and stable panel for a floor of an automobile trunk. Ilzhöfer concerns a simple and ecologically friendly panel. Dubois, Yoshinori and Ilzhöfer, alone or in combination, fail to teach forming a hinge between two portions of the panel at a predetermined place in the panel by cutting only a narrow incision through one of first and second skins, and substantially through the entire thickness of a cellular core, while leaving the other skin intact as presently claimed. As such, the Examiner has failed to make a *prima facie* case of obviousness as is required under 35 U.S.C. § 103.

Furthermore, the serrated blade used to make the narrow incision 104 of the present invention had a thickness of 0.5 mm. (See, specification, page 8, ll. 8-9). In contrast, Yoshinori discloses the integral hinge (30) has a width (A) that is about 4 mm. (See, Yoshinori, para. 0015). As such, Yoshinori fails to disclose, teach or suggest forming a hinge between two portions of the panel by cutting only a narrow incision. The Examiner urges that a 4 mm wide hinge as disclosed by Yoshinori may be considered narrow by one [having ordinary skill] in the cutting arts. However, Yoshinori discloses a structure having a total thickness in a range of 7-8 mm (i.e., honeycomb 22 is 5 mm, material 27 and 28 are 0.5-1 mm and layer 24 is 1 mm). (See, for example, Yoshinori at Fig. 3 and at para. 0015). Therefore, hinge 30 has a width that is 50% or more of the thickness of the overall structure. As such, one having ordinary skill in the art may consider the hinge width disclosed by Yoshinori to be wide, not narrow.

Regarding the claims which depend from claims 1 and 15, Applicants contend that these claims are patentable for at least the same reasons that claims 1 and 15 are patentable. Moreover, Applicants contend these claims recite further limitations, in addition to the limitations of claims 1 and 15, which render these claims additionally patentable.

In particular, regarding claims 2, 5 and 6, the Examiner asserts that the references do not disclose when or where the hinge is formed in the panel. However, Yoshinori discloses that during the thermofusion of the epidermis material (28) and the core (26), an integral hinge (30) is obtained by maintaining an epidermis layer (24) or an upper epidermis material (27) to an integrated state between portions of a honeycomb layer (22). (See, computer generated translation of Yoshinori, a copy of which is attached for the Examiner's convenience, para. 0014). As such, Yoshinori clearly discloses hinge 30 is obtained (i.e., formed) during the thermofusion, not by cutting a narrow incision through one skin and the entire core of the panel while leaving the second skin intact as presently claimed.

Consequently, in view of these remarks, Applicants respectfully contend that the rejections have been fully replied to and traversed, and that the application is in condition for allowance, and the Examiner is respectfully requested to pass this case to issue.

The Examiner is respectfully requested to telephone the undersigned to discuss prompt resolution of any remaining issues necessary to place this case in condition for allowance.

No fee is believed to be due for the filing of this paper. Please charge any additional fees or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978 -- a duplicate of this paper is enclosed for that purpose.

Respectfully submitted,

Nicholas Hochet, et al.

By _____

Thomas W. Saur
Reg. No. 45,075
Attorney/Agent for Applicant

Date: July 11, 2003

BROOKS & KUSHMAN P.C.
1000 Town Center, 22nd Floor
Southfield, MI 48075
Phone: 248-358-4400
Fax: 248-358-3351